

CLAIMS

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What is claimed is:

1. An apparatus for mounting a connector to a tray comprising:
 2. a rear plate of said tray, with a first rear hole;
 3. a first fastener mounted in said first rear hole;
 4. a first spring mounted on said first fastener;
 5. a mounting plate attached to the connector, wherein said mounting
 6. plate is mounted on said first fastener and said first spring.

2. The apparatus of claim 1 wherein the diameter of said first fastener is smaller than said the diameter of said first rear hole such that said first fastener floats within said first rear hole.

3. The apparatus of claim 1, further comprising a first guide pin, wherein said first guide pin is mounted on said mounting plate.

4. The apparatus of claim 3, wherein said first guide pin is mounted on said first fastener so as to secure the mounting plate to said first fastener.

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5. The apparatus of claim 3 wherein said first guide pin is tapered.

5.
6. The apparatus of claim 1 wherein said first spring is a coil spring.

6.
7. The apparatus of claim 5 wherein said first spring is coaxial with said first fastener.

4.
8.

The apparatus of claim 1 wherein said guide pin protrudes from said mounting plate to a greater extent than said connector protrudes from said mounting plate.

1 9. The apparatus of claim 1 wherein said rear plate of said tray further
2 comprises a second rear hole, said apparatus further comprising
3 a second fastener mounted in said second rear hole;
4 a second spring mounted on said second rear hole; wherein
5 said mounting plate is mounted on said first and second fasteners and
6 said first and second springs.

1 10. The apparatus of claim 9 wherein
2 the diameter of said first fastener is smaller than said the diameter of
3 said first rear hole such that said first fastener floats within said first rear hole;
4 and
5 the diameter of said second fastener is smaller than said the diameter
6 of said second rear hole such that said second fastener floats within said
7 second rear hole.

1 12.
11. The apparatus of claim 9 further comprising a first guide pin and a
2 second guide pin, wherein
3 said first and second guide pins are mounted on said mounting plate;
4 and

5 wherein said first and second guide pins protrude from said mounting
6 plate to a greater extent than said connector protrudes from said mounting
7 plate.

13.
12. The apparatus of claim 12 wherein said first and second guide pins are tapered.

14.
13. The apparatus of claim 9, wherein
said first fastener comprises a first bolt; and
said second fastener comprises a second bolt.

15.
14. The apparatus of claim 13, wherein
said first bolt comprises a first shoulder bolt; and
said second bolt comprises a second shoulder bolt.

16.
15. The apparatus of claim 14, wherein
said mounting plate comprises a first mounting hole and a second
mounting hole;
said mounting plate is mounted on said first bolt and said second bolt
such that said first bolt is positioned through said first mounting hole; and
said second bolt is positioned through said second mounting hole.

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16. The apparatus of claim 15, further comprising a first guide pin and a
second guide pin, wherein:
said first guide pin and second guide pin are each threaded; and
said first guide pin is threaded on said first bolt; and

5 said second guide pin is threaded on said second bolt; wherein
6 ~~17.~~ said first guide pin and said second guide pin secure said mounting
7 plate to said first bolt and said second bolt.

~~11.~~
~~17.~~ The apparatus of claim 9, further comprising
a guide pin block, wherein
said first and second fasteners are mounted in said guide pin block;
and
said guide pin block is mounted to said rear plate.

~~7.~~
~~18.~~ The apparatus of claim 1 further comprising first and second guide
holes located on said mounting plate.

~~8.~~
~~19.~~ The apparatus of claim ~~18~~ ⁷ wherein said first and second guide holes
are located astride said connector.

1 ~~20.~~ A module for insertion into a tray, said module comprising,
2 a connector at the rear of said module;
3 a first guide hole located in proximity to said connector; wherein
4 said first guide hole is configured such that said first guide hole
5 interfaces with a first guide pin located in proximity to a corresponding
6 connector located on said tray.

1 21. The module of claim 20, further comprising,
2 a second guide hole, wherein,

3 said first and second guide holes are astride said connector;
4 said first and second guide holes are each within 3 centimeters of said
5 connector; and
6 said first and second guide holes are configured to interface with first
7 and second guide pins, respectively, located astride a corresponding
8 connector located on said tray.

1 22. A module for insertion into a tray, said module comprising,
2 a connector at the rear of said module;
3 a first guide pin located in proximity to said connector; wherein
4 said first guide pin is configured such that said first guide pin interfaces
5 with a first guide hole located in proximity to a corresponding connector
6 located on said tray.

1 23. The module of claim 22, further comprising,
2 a second guide pin, wherein,
3 said first and second guide pins are astride said connector;
4 said first and second guide pins are each located in proximity to said
5 connector; and
6 said first and second guide pins are configured to interface with first
7 and second guide holes, respectively, located astride a corresponding
8 connector located on said tray.

Sub 2069 24. A method of mounting a module in a tray, said method comprising the
2 steps of:

3 providing a module, wherein said module includes first and second
4 guide holes astride a first connector;

5 providing a tray, wherein said tray includes a mating connector
6 configured to accept said first connector, wherein said mating connector is
7 coupled to said tray by at least one spring and wherein said mating connector
8 is mounted between first and second guide pins;

9 inserting said module into said tray until said first and second guide
10 holes mate with said first and second guide pins such that said first connector
11 is aligned with said mating connector by said spring; and

12 further inserting said module into said tray until said first
13 connector is seated inside said mating connector.

25. The method of claim 24, wherein,

said springs serve to position said mating connector such that said
mating connector mates with said first connector; and

said springs provide sufficient force to mate said mating connector with
said first connector.

Subat 26. A method of mounting a module in a tray, said method comprising the
2 steps of:

3 providing a module, wherein said module includes first and second
4 guide pins astride a first connector;

5 providing a tray, wherein said tray includes a mating connector
6 configured to accept said first connector, wherein said mating connector is

7 coupled to the rear of said tray with at least one spring and said mating
8 connector is mounted between first and second guide holes;
9 inserting said module into said tray until said first and second guide
10 holes mate with said first and second guide pins such that said first connector
11 is aligned with said mating connector by said spring; and
12 further inserting said module into said tray until said first
13 connector is fully seated inside said mating connector.

27. The method of claim 26, wherein,

said springs serve to position said mating connector such that said
mating connector mates with said first connector, and

said springs provide sufficient force to mate said mating connector with
said first connector.